REMARKS

The Examiner is thanked for his Office Action.

The claims presently outstanding are Claims 1-18. By the foregoing amendments, various Claims are sought to be amended. These changes are believed not to introduce new matter, and their entry is respectfully requested.

Claims 1 and 14 are arguably being narrowed at this time (as are their dependent Claims). However, Applicants are not disclaiming nor permanently relinquishing any subject matter, and reserves the right to prosecute such claim scope further in a continuing application.

The Examiner is thanked for noting the informalities in the specification and drawings, which have now all been corrected. However, the Rule 83 objection stated in paragraph 9 is respectfully traversed: note that the Rule does not specify what level of detail is required. Figure 47 shows a general view of a sleeve valve mechanism which can be used to satisfy the claimed relationship, but numerous mechanical implementations are possible. This particular point of invention does not relate to a particular mechanism, but rather to a new functional relationship. This relationship is shown very clearly in Figure 48: in this embodiment the pressure drops when the port opens (indicating failure) and then goes back up to the "Closed Port" level so that the bit can be run to failure if desired. This functional relationship is described, for example, on page 41 as follows:

> A microprocessor or digital signal processor is used to implement the detection algorithm and monitor the sensors. Additionally the processor will control the actuator, which opens and closes the sleeve valve. Of course any valve type could be used. It may be desirable in some cases to close the bypass valve after a certain delay, so normal drilling can proceed if desired. **Figure 48** shows the surface pressure sequence associated with this type of operation.

That is, the application does not purport to require a mechanism for

irreversible movement: what is being described is a control relationship.[1]

The Examiner's rejections under §112(1) are similarly traversed. The Examiner is requested to reconsider the question of enablement in view of the foregoing remarks. Specifically, the claimed sequencing relationship is believed to be amply disclosed.

Art Rejections

The art rejections are all respectfully traversed. Neither of the principle references (Jogi and Quichaud) show downhole circuitry which signals first and second states as claimed. (The fact that a human could detect approaching failure and imminent failure from examining logs does not at all imply that Joshi's electronics are able to make that distinction.)

The Examiner can also see, by reviewing the support for Figure 6 as discussed above, that no reference remotely suggests any such relationship.

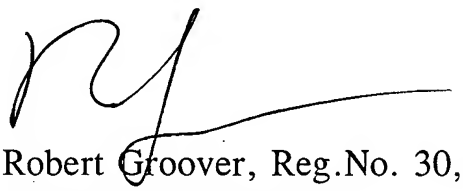
If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out very specifically where such teaching may be found.

[1]A mechanical relationship is mentioned as another implementation possibility, but this is just another alternative.

Conclusion

Thus all grounds of rejection and/or objection are traversed or accommodated, and favorable reconsideration and allowance are respectfully requested. A telephone interview is requested.

Respectfully submitted,



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April 21, 2003

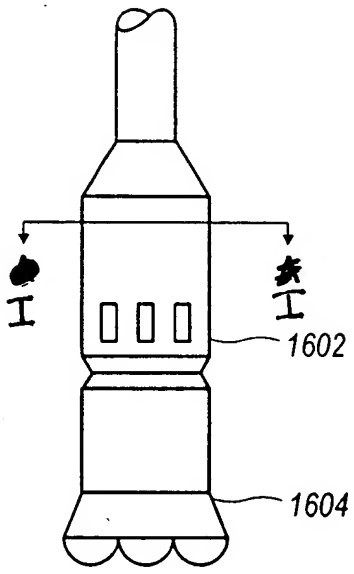

Fig. 16A

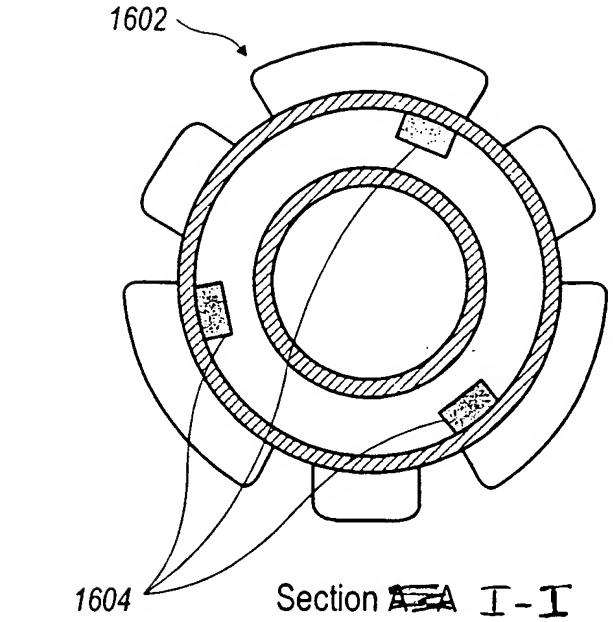

Fig. 16B

~~Fig.16~~

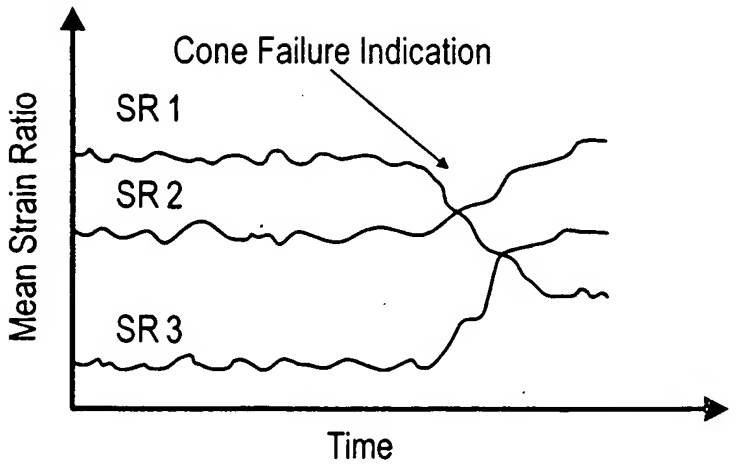

Fig.17

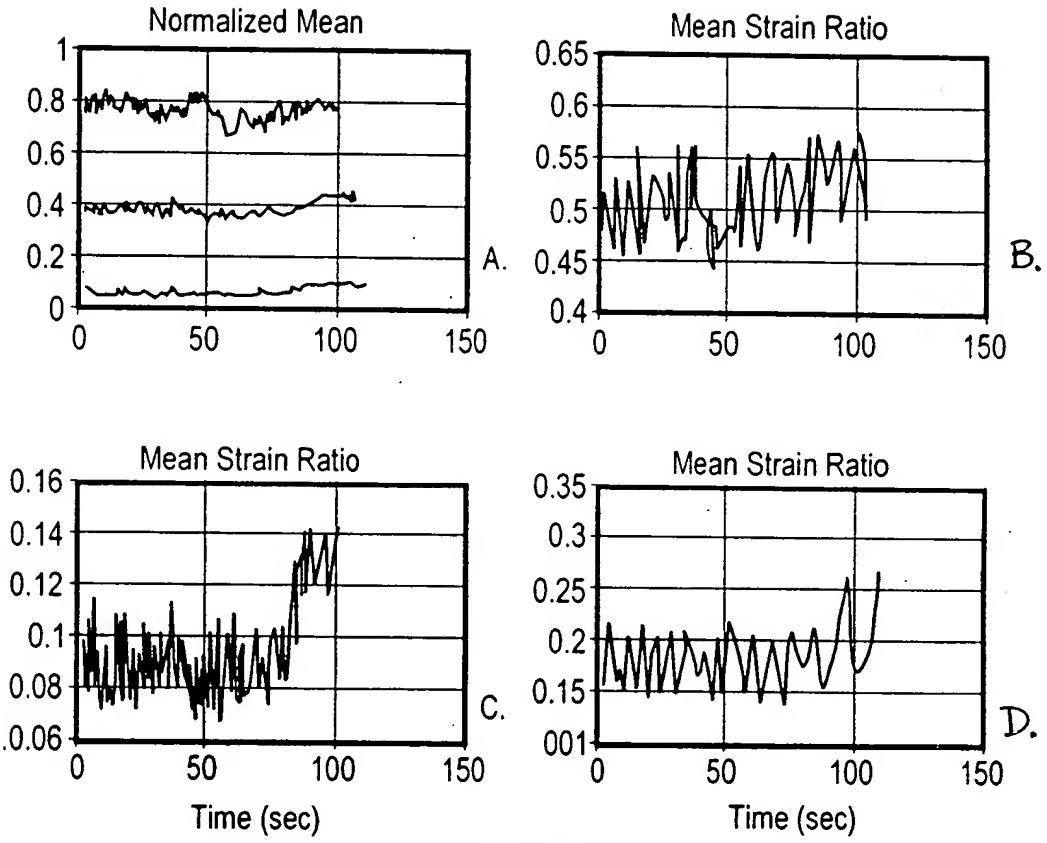

FIG. 21

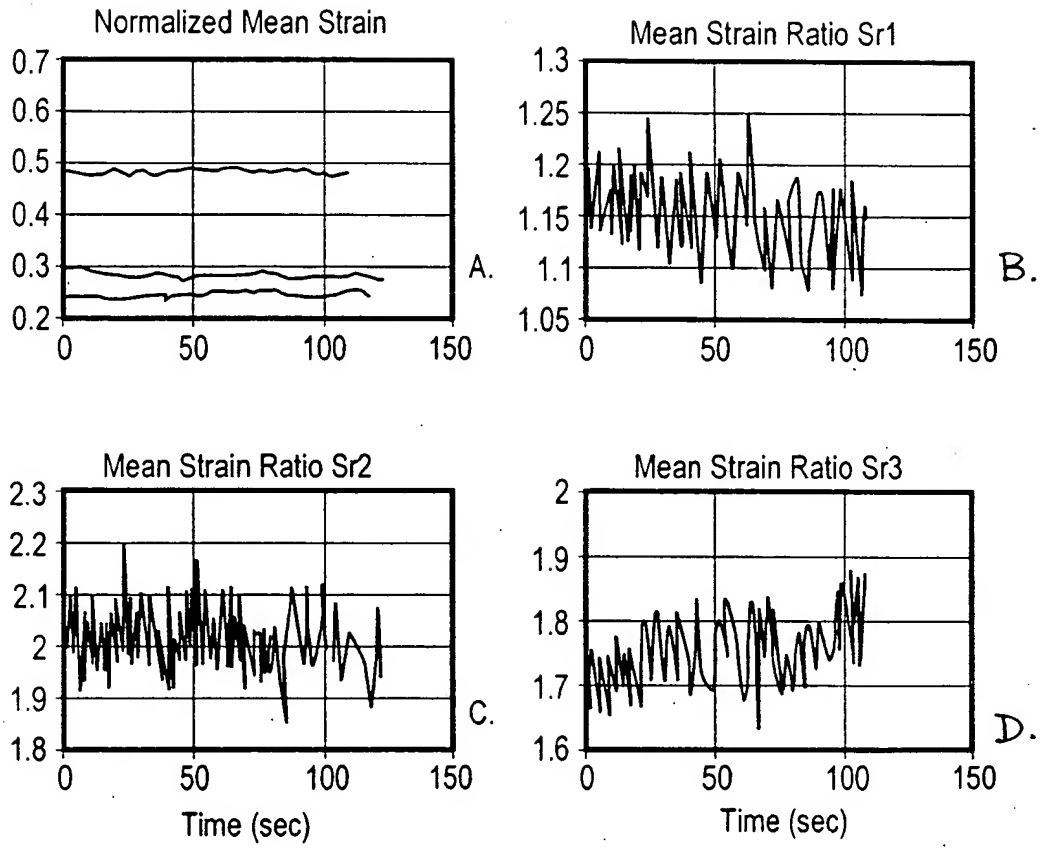

FIG. 27

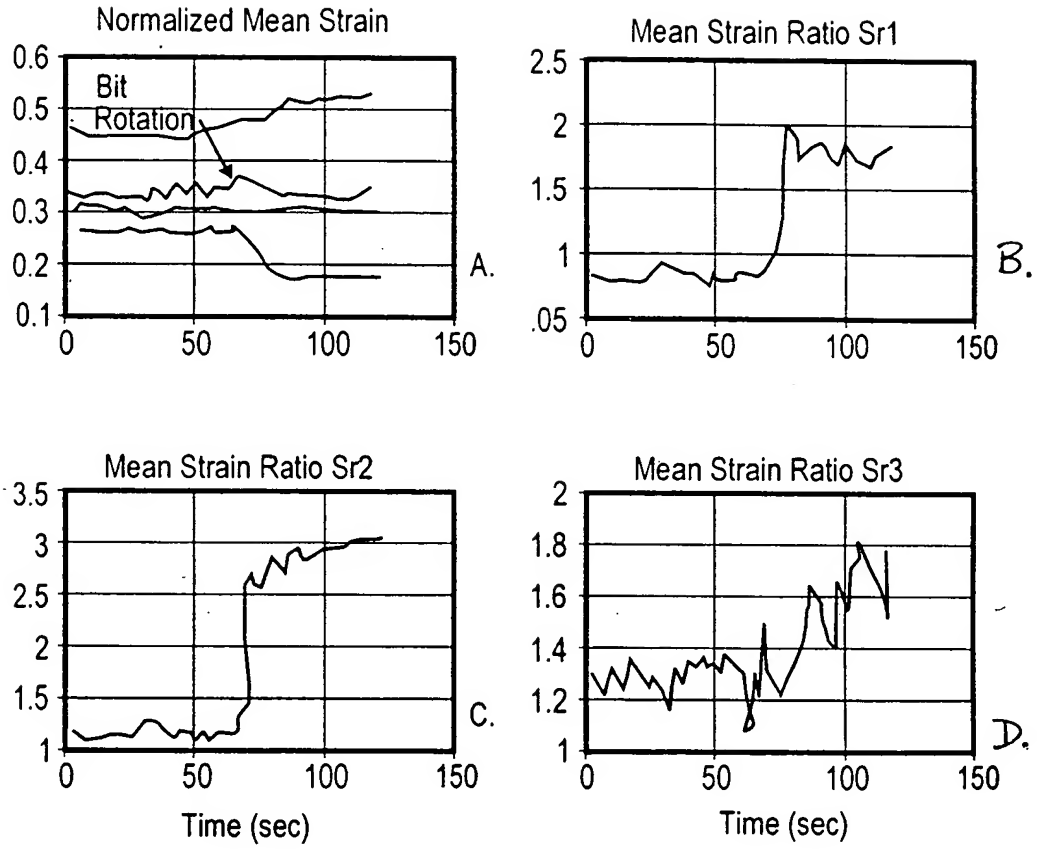

FIG. 31

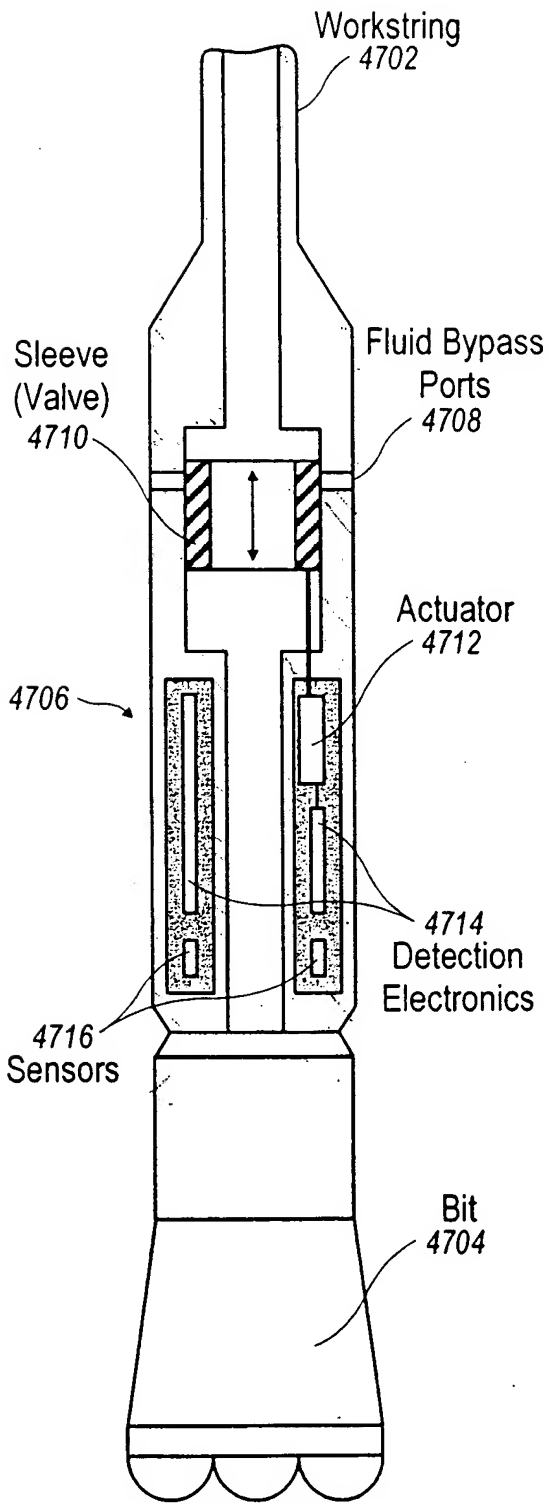

Fig. 47

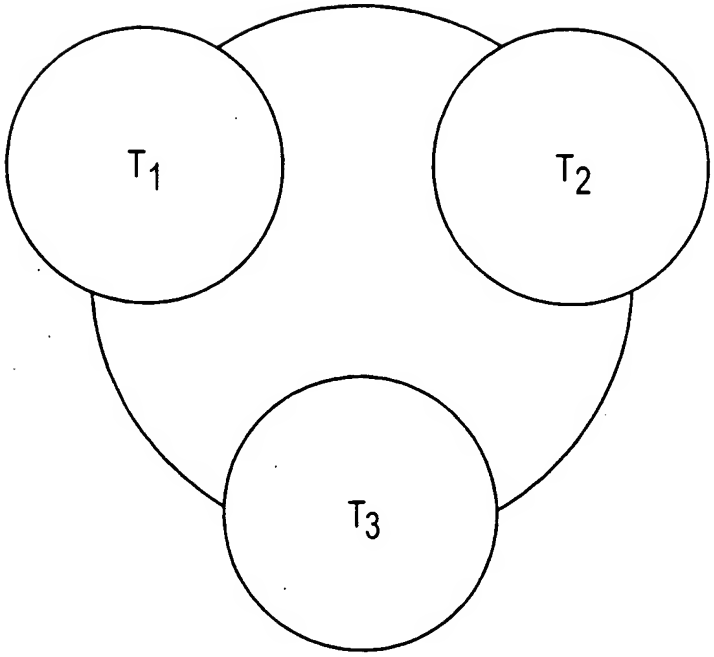

Fig. 50

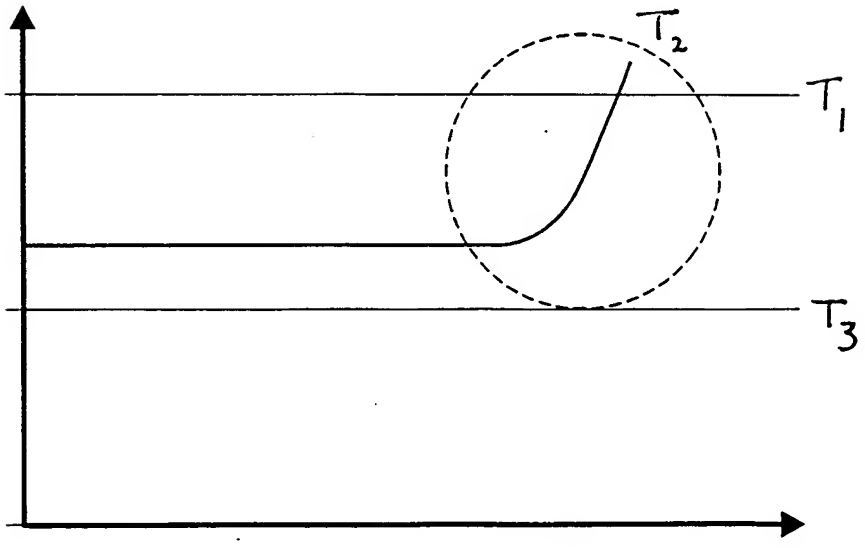

Fig. 51

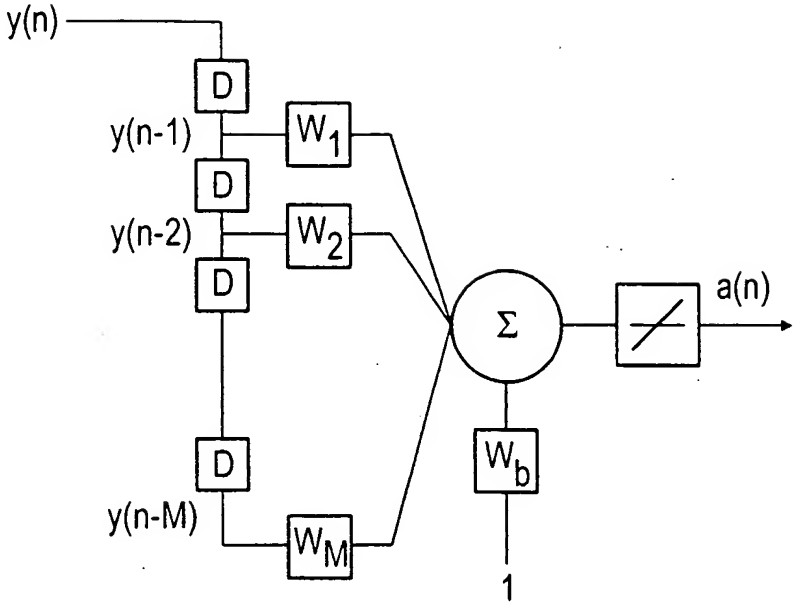

Fig.5 4

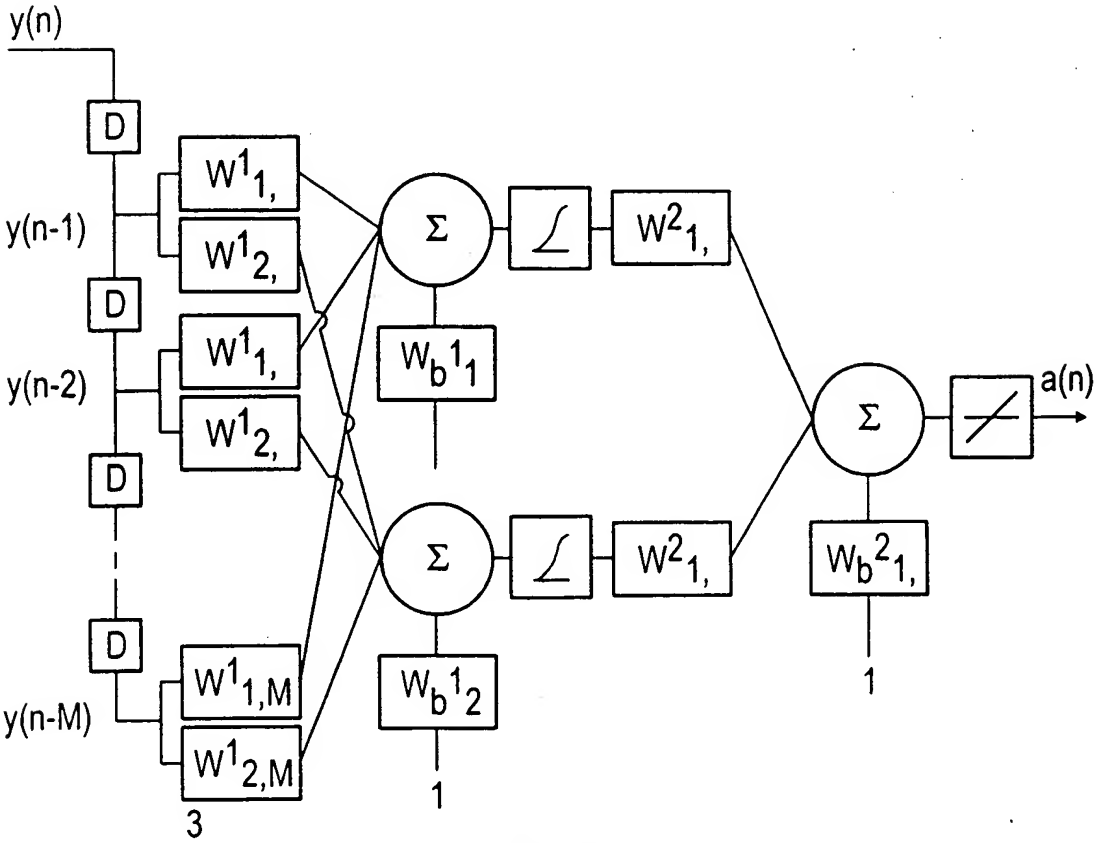

Fig.5 5